

3.20 COMPARISON OF ALTERNATIVES

This section provides a summary of the environmental impacts associated with the five transmission line route alternatives, as well as the No Action Alternative. Information from all 19 resource topics is combined here to facilitate the comparison of alternatives and identify the preferred alternative. As explained below, many of the impacts would be common to all of the route alternatives and do not differ greatly among the routes in terms of their extent or level of significance.

Therefore, to identify the preferred alternative, it was necessary to focus in on those resources and impacts that would be most useful in distinguishing among the five route alternatives. For this project, they include high-priority wildlife species subject to special regulatory protections or habitat management goals (e.g., special-status species and mule deer habitat), high priority invasive nonnative plants (e.g., noxious weeds and cheatgrass), cultural resources that receive special legal protection, and visual impacts that are not easily or entirely mitigable. These resource impacts were quantified using GIS technology and other mapping techniques, then the impacts for each route were tabulated and combined to give an overall ranking of route alternatives.

This ranking identified the Pine Valley (a) route as the environmentally preferred route alternative. The methodology used to compare route alternatives is described further in Section 3.20.1. and Appendix C.

This is preceded by a discussion of impacts that would be common to all route alternatives and an explanation as to why these resource topics were not considered primary characteristics in terms of their usefulness in distinguishing among the routes.

3.20.1 SUMMARY OF IMPACTS

IMPACTS COMMON TO ALL ROUTE ALTERNATIVES

Geology and Minerals

All of the route alternative would traverse areas with steep terrain (slopes >15%), seismic hazards, landslide potential, and soft, expansive, and corrosive soils, which could damage the tower footings. Engineering techniques that address these constraints include: soil testing, site investigations to avoid tower placement in active fault zones, selective use of helicopters in steep terrain, and reinforcing tower foundations. The Crescent Valley route alternatives could conflict with a planned Cortez mine expansion along Segment B (Pediment Mine). Mitigation could include coordinating with the mining company to acquire land and/or placing towers to avoid direct conflicts. Similarly, all routes traverse areas with oil, gas and geothermal resources in the vicinity; however, direct conflicts are not expected as these resources can usually be tapped in multiple locations and/or angle drilled to extract resources. Thus, geology and mineral impacts would be similar for all route alternatives and are not that useful in distinguishing between the routes.

Soils

All five route alternatives would traverse areas with highly erodible soils and steep slopes that could cause significant erosion impacts and special challenges related to reclamation success. These impacts and obstacles can be mitigated by minimizing grading and vegetation removal in problem areas, using erosion control best management practices, and using weight-dispersing construction equipment and techniques in wet areas or in highly erodible soils when feasible. Thus, soils are not considered a key characteristic for selecting the preferred alternative.

Water Resources

All five route alternatives have the potential to cause construction-related discharges of sediment and contaminants into water and alter flows in channels, shallow springs, and wells. Similarly, all five alternatives would cross blue line streams, floodplains, and flash flood hazard areas. However, impacts to water resources can be mitigated and, are therefore considered secondary characteristics for determining the preferred alternative.

Vegetation Resources

Losses of upland and disturbed plant communities would be adverse but not significant for any of the five route alternatives. Similarly, temporary disturbance to wetlands, other waters of the U.S. (e.g., Humboldt River), and riparian communities would be adverse but not significant. Mitigation measures that would minimize impacts include restricting construction vehicles and equipment to designated areas, using best management practices, installing fencing around wetland and riparian areas to create a buffer zones, and restoring wetlands and riparian areas to ensure no net loss. Thus, vegetation is considered a secondary characteristic for determining the preferred alternative.

Range Resources (Livestock and Wild Horses)

No significant adverse impacts to range resources were identified, as detailed in Section 3.8.

Public Health and Safety

The analyses of public health and safety impacts are focused on electric and magnetic fields (EMF), fire hazards, and hazardous materials. Research into EMF studies found a general consensus among medical and scientific communities that there is insufficient evidence to conclude that EMF causes adverse health effects. The potential of fire from transmission line construction and operation would be minimized through tree clearing in the right-of-way, engineering design, constructing the line based on minimum ground clearance, and other standards set by the National Electrical Safety Code, and implementing a Fire Prevention and Suppression Plan. SPPC would also implement a Hazardous Materials Management Plan, including spill prevention and control measures and blasting safety measures, to minimize hazards. These safety measures would be implemented for any of the route alternatives. Thus, this category is not considered useful for selecting the preferred alternative.

Noise

Short-term construction noise would be significant for residents and facilities within 2,000 feet of construction activities. However, this impact could be mitigated by requiring mufflers on vehicles and limiting noisy construction activities (such as blasting) near residences and other buildings between Monday through Saturday, 7 a.m. to 7 p.m. During project operation, people living or working near the right-of-way edge could experience noise from the transmission lines (i.e., humming or crackling noises during wet or humid conditions).

Transmission line noise could significantly impact approximately 10 existing residential units along Segment B near Crescent Valley (if one of those routes was used) and/or approximately 11 residential units in a subdivision along Segment J (which is common to all five route alternatives). However, these impacts could be mitigated to less-than-significant levels. Because of the extremely small number of existing residences involved and the opportunities for mitigation, noise is considered a secondary category for selecting the preferred alternative.

Air Quality

No significant adverse impacts to air quality were identified in Section 3.12. Therefore, this is not a highly useful category for selecting the preferred alternative.

Land Use and Access

The Crescent Valley (a) and (b) alternatives contain the most existing developments within 1,000 feet of the project (i.e., 27 and 30 residential units, respectively). The number of existing developments along the Pine Valley (a) and (b) alternatives rank in the middle (i.e., 16 and 19 units, respectively). The Buck Mountain alternative has the same number as the Pine Valley alternative (a) (i.e., 16 units), but less than Pine Valley (b). As a result, the Buck Mountain alternative would likely have the least potential conflict with existing development.

For privately held parcels in the proposed Falcon to Gonder right-of-way, the Buck Mountain alternative would traverse the greatest number (73), while the Pine Valley (a) alternative would traverse the fewest (56) (Stantec 2000). Since land use impacts related to right-of-way acquisition and loss of property values would be mitigated through payment of financial compensation to private property owners along any of the route alternatives, as described in Section 3.13, this is considered a secondary category for selecting the preferred alternative.

Recreation/Wilderness

No significant impacts to recreation or wilderness resources were identified in Section 3.14.

Social and Economic Values

No significant adverse impacts to social or economic values were identified in Section 3.15, other than those described above under Land Use and Access. Property tax benefits to local counties would occur with any of the route alternatives. Therefore, this is not considered a useful category for selecting the preferred alternative.

Paleontology

All of the route alternatives would cross the Hay Ranch Formation, which has a high potential for the existence of significant paleontological resources such as fossil mammals, plants, and invertebrates. Mitigation measures are recommended that would apply to all of the route alternatives. Thus, this is not a highly useful category for selecting the preferred alternative.

Environmental Justice

No environmental justice impacts were identified in Section 3.18.

Native American Concerns

All of the route alternatives have the potential to disturb or destroy medicinal plants that are important in maintaining the Western Shoshone cultural traditions. This was identified as a potentially significant adverse impact in Section 3.19. However, interviews with Western Shoshone traditionalists and pre-construction surveys would be conducted to identify areas with rare medicinal plants, and measures would be taken to avoid them or to identify other appropriate mitigation.

Access Roads

Analyses of access road impacts are provided throughout the resource sections in Chapter 3. Because there would not be substantial differences in the types of impacts or miles of access roads that would be required for the five route alternatives, this is not considered a useful category for selecting the preferred route. However, it is reflected in the analysis of invasive weed impacts, as explained in the following section.

DISTINGUISHING RESOURCE CATEGORIES AND IMPACTS

Based on the analyses contained in Chapter 3, the following resources and impacts were identified as being the most critical and useful for distinguishing between the alternatives and identifying a preferred route:

<u>Resource Category</u>	<u>Impacts / Evaluation Factor</u>
Wildlife and Special-Status Species	Mule deer winter range Sage grouse leks Ferruginous hawks Burrowing owls Golden eagles Pygmy rabbits
Invasive Nonnative Species (e.g., Noxious Weeds and Cheatgrass)	Existing noxious weed infestation Burned areas Undisturbed areas New non-parallel alignment New centerline and spur road construction Miles of access road improvements required
Cultural Resources	Areas of concern to Western Shoshone Prehistoric sites Historic sites Visual impact on cultural sites Eureka-Palisade Railroad grade Pony Express Trail Historic ranches
Visual Resources	Visual impacts on Key Observation Points (KOPs) New non-parallel alignment

This section summarizes the findings that led to identification of the Pine Valley (a) route as the preferred alternative. The methodology used to develop the impact summary tables and ranking of alternatives is explained below and in further detail in Appendix C.

Methodology

To facilitate the comparison of alternative routes, the distinguishing resources and impacts listed above were plotted on maps and quantified using GIS technology and other techniques. This data was recorded in a spreadsheet matrix and tabulated for each route segment as shown in [Figure C-1](#) (Appendix C). The segment totals were then transferred to the following tables (Tables 3.20-1 through 3.20-4) and tabulated to show how the routes compare in terms of impacts to the four key resource categories.

To calculate the totals and ranking of each route alternative, Table 3.20-1 for example, shows the number of miles of sensitive wildlife habitat that the transmission line would cross by segment. The segment totals are then combined to obtain the route totals (e.g., the Crescent Valley (a) route is comprised of segments A+B+F+G+I+J), which are then multiplied by the impact rating score and the relative importance to get the total scoring numbers in the right hand columns.

High-Medium-Low impact ratings were assigned to each evaluation factor to reflect the fact that some impacts would be more significant than others, due to proximity or sensitivity of the resource. The impact ratings were given the following numeric values H (High) = 3, M (Medium) = 2, and L (Low) = 1. Appendix C provides more information about the assumptions behind these ratings.

Similarly, the relative importance rating gives greater importance to those resources that are most sensitive and afforded higher levels of regulatory protection than the others. For example, in Table 3.20-1, impacts to active sage grouse leks and ferruginous hawk nests are given higher relative importance ratings than impacts to other wildlife.

Finally, to identify the ranking of the route alternatives, the scores for each impact/evaluation factor are totaled up and the ranking is revealed. For example, the Pine Valley (a) route receives the best ranking in the Wildlife and Special-Status Species category. This methodology is repeated for the other three distinguishing resource categories (i.e., invasive species, cultural resources, and visual resources) and the individual rankings are combined to give an overall ranking of route alternatives (shown in Table 3.20-5).

This methodology is explained in further detail in Appendix C. The following presents the summary of impacts and route alternative rankings for each of the four key resource categories.

Wildlife and Special-Status Species Impacts

As shown in Table 3.20-1, the Crescent Valley (a) and (b) route alternatives would have the greatest overall impacts to sensitive wildlife species. In addition to crossing 10 to 12 miles of mule deer winter range, respectively, the Crescent Valley routes cross the most miles of ferruginous hawk territory and near several sensitive sage grouse leks. The Pine Valley (a) alternative ranks best in this category, having the fewest impacts to sensitive wildlife species overall. The Pine Valley (b) alternative ranks third, while the Buck Mountain alternative ranks second. Although Buck Mountain is the shortest route, it would be extremely close to several sensitive sage grouse leks and impact the greatest number of ferruginous hawk nests.

TABLE 3.20-1: COMPARISON OF ROUTE ALTERNATIVES WILDLIFE AND SPECIAL-STATUS SPECIES IMPACTS

Segments	A	B*	C	D	E	F	G	H	I	J	Impact Rating	Impact Rating Score	Relative Importance	Crescent Valley		Pine Valley		Buck Mtn
Wildlife and Special-Status Species	Miles	Miles	Miles	Miles	Miles	Miles	Miles	Miles	Miles	Miles				(a)	(b)	(a)	(b)	
Mule Deer Winter Range		2.0	2.6			6.3	1.7	3.8			L	1	1	10.0	12.1	10.6	12.7	2.6
Sage Grouse Leks**			3.3			0.9					L	1	3	69.3	69.3	12.6	12.6	9.9
Sensitive Sage Grouse Leks		11.1			11.1	3.8					M	2	4	80.8	80.8	30.4	30.4	88.8
Historic Sage Grouse Leks		12.6	4.6		9.0	4.7		6.6	16.3	12.1	L	1	2	91.4	104.6	75.4	88.6	51.4
Ferruginous Hawk Nests		0.9			5.2	0.9	0.8	2.4	0.5		L	1	3	9.3	14.1	6.6	11.4	15.6
Ferruginous Hawk Nesting Territory		19.2	4.3		16.6	4.1	17.8	13.8	9.9	2.3	L	1	2	106.6	98.6	76.8	68.8	46.4
Burrowing Owl Burrows		0.6	1.7								L	1	2	1.2	1.2	3.4	3.4	3.4
Golden Eagle Nests					0.7						L	1	2	0.0	0.0	0.0	0.0	1.4
Pygmy Rabbit Burrows					0.9						L	1	2	0.0	0.0	0.0	0.0	1.8
TOTAL														368.6	380.7	215.8	227.9	221.3
RANK														4	5	1	3	2

* Segment B incorporating the L re-route.

** Sighted in 1999 and 2000 surveys

Note: The impact ratings reflect the level of impact anticipated after mitigation.

Invasive Nonnative Species Impacts

As shown in Table 3.20-2, impacts related to invasive nonnative species (e.g., noxious weeds and cheatgrass) would be highest on the Buck Mountain route alternative, as it has the greatest potential for introducing or spreading such weeds into relatively pristine habitat. The Buck Mountain route would involve the most miles of new non-parallel transmission line and the most miles of new disturbance to areas vulnerable to noxious weed invasions, including recent burn areas, which can be particularly vulnerable.

The Crescent Valley (a) and (b) route alternatives would have the lowest overall impacts related to invasive nonnative plant species. The Crescent Valley routes would involve the fewest miles of new ground disturbance and the most miles paralleling existing transmission lines. In general, this indicates that the Crescent Valley route alternatives would result in the fewest miles of new disturbance to areas vulnerable to weed invasions. The Pine Valley (a) route alternative ranks third best overall.

The table shows the relative importance of noxious weed infestations, 1999 burned areas, and new non-parallel alignment elevated above the other impacts. Existing noxious weed infestations are given a higher relative importance because there are so few miles of infestations to begin with. Burned areas and new non-parallel alignment are also elevated because they best characterize the differences between the routes in terms of vulnerability to new disturbances. The burned areas are particularly vulnerable to invasions if disturbed, while areas of new non-parallel alignment indicate areas without existing transmission line corridors nearby.

TABLE 3.20-2: COMPARISON OF ROUTE ALTERNATIVES INVASIVE NONNATIVE SPECIES IMPACTS (E.G., NOXIOUS WEEDS)

Segments	A	B*	C	D	E	F	G	H	I	J	Impact Rating	Impact Rating Score	Relative Importance	Crescent Valley		Pine Valley		Buck Mtn	
	Miles	Miles	Miles	Miles	Miles	Miles	Miles	Miles	Miles	Miles				(a)	(b)	(a)	(b)		
Noxious Weeds Infestation	0.1	0.1							0.2		L	1	100	40.0	40.0	29.0	29.0	9.0	
Burned (1999)		7.2	9.5		12.1						L	1	25	178.8	178.8	238.3	238.3	540.8	
Undisturbed	16.7	62.1	35.7	19.5	74.8	16.8	19.9	20.4	29.4	40.1	L	1	2	370.0	371.0	356.2	357.2	334.6	
New Non-parallel Alignment		18.6	35.7	19.5	74.8	16.8	17.0	20.4			L	1	50	2620.0	2790.0	4450.0	4620.0	5525.0	
New Centerline and Spur Road Construction	6.1	36.9	35.7	19.5	74.8	16.8	19.9	20.4	26.2	40.1	L	1	2	292.2	293.1	328.8	329.8	313.4	
Access Roads Requiring Improvement	31.9	67.0	30.9		88.0	17.0	18.8	21.1	52.2	93.5	L	1	1	280.5	282.7	244.3	246.6	244.3	
														TOTAL	3781.4	3955.6	5646.6	5820.8	6967.1
														RANK	1	2	3	4	5

* Segment B incorporating the L re-route.

* Segment B incorporating the L re-route.

Note: The impact ratings reflect the level of impact anticipated after mitigation.

Cultural Resource Impacts

The Crescent Valley (a) and (b) route alternatives could potentially affect the highest number of significant cultural sites (see Table 3.20-3). These two routes would come within 2 miles of several areas of concern to Western Shoshone tribes, as well as within 2 miles of six historic ranches. They also could impact a significant ethnohistoric property. These routes contain large numbers of significant or unevaluated historic and prehistoric sites within the 500-foot wide study corridor, indicating the potential for disturbance during construction of the transmission line.

TABLE 3.20-3: COMPARISON OF ROUTE ALTERNATIVES — CULTURAL RESOURCE IMPACTS

Segments	A	B*	C	D	E	F	G	H	I	J	Impact Rating	Impact Rating Score	Relative Importance	Crescent Valley		Pine Valley		Buck Mtn	
Cultural Resources	#	#	#	#	#	#	#	#	#	#				(a)	(b)	(a)	(b)		
Areas of Concern to Western Shoshone (within approx. 2 miles)**											L	1	3	3	3	0	0	0	
Low											M	2	3	12	12	0	0	0	
Med											H	3	3	0	0	0	0	0	
High																			
Significant (or unevaluated) Prehistoric Sites within 500 ft corridor											L	1	3	0	0	0	0	0	
Low											M	2	3	378	378	360	360	192	
Med	3	8	3	2		8	4	4	14	26	M	2	3	378	378	360	360	192	
High		7	1	1	38	2	1	1	4	1	H	3	3	135	135	90	90	360	
Significant (or unevaluated) Historic Sites within 500 ft corridor																			
Low		1							1	1	L	1	3	9	9	6	6	3	
Med						6	1	1	3		M	2	3	60	60	60	60	0	
High		3			3	1	1	1		1	H	3	3	54	54	27	27	36	
Visibility from Eureka-Palisade Railroad																			
Low									1		L	1	2	2	2	2	2	0	
Med			1		1			1			M	2	2	0	4	4	8	8	
High				1		1					H	3	2	6	6	12	12	0	
Historic Ranches within 2 miles		1			1		1		1		M	2	1	6	4	4	2	2	
* Segment B incorporating the L re-route.														TOTAL	665	667	565	567	601
**Locations are confidential and hot shown.														RANK	4	5	1	2	3

Segments	A	B*	C	D	E	F	G	H	I	J	Impact Rating	Impact Rating Score	Relative Importance	Crescent Valley		Pine Valley		Buck Mtn	
	#	#	#	#	#	#	#	#	#	#				(a)	(b)	(a)	(b)		
Visual Impacts to Cultural Sites											L	1	1	2	2	2	2	2	
Low		1	1							1	M	2	1	6	4	4	2	2	
Med		1			1		1		1		H	3	1	3	6	3	6	6	
High		1		1	2			1											
* Segment B incorporating the L re-route.														TOTAL	11	12	9	10	10
** Key Observation Point														RANK	3	4	1	2	2

Combined Rank Analysis

RANK	4	5	1	2	3
------	---	---	---	---	---

Note: Impact ratings in this category reflect the maximum possible impact to cultural sites before mitigation, because the exact locations of tower bases and other areas of disturbance have not yet been finalized and are therefore unknown.

The Buck Mountain route is ranked third among the alternatives in terms of impacts to cultural resources. It contains the most significant or unevaluated prehistoric sites within the 500-foot wide study corridor. The Pine Valley (a) and (b) alternatives are ranked first and second in this category, respectively.

The distribution of site types along the Crescent Valley and Pine Valley route alternatives are approximately 50% prehistoric, 34% historic, 15% multi-component, and 1% modern resources (or of unknown date). These sites were identified within the study area during field surveys and through literature searches. The Buck Mountain route alternative exhibits a slightly higher percentage of prehistoric sites (58%) over historic sites (24%).

Not every significant cultural resource site identified in the table would be directly affected by project construction. Many of these resources could be strategically avoided during construction. Impact ratings in this category reflect the maximum possible impact to cultural sites before mitigation, because the exact locations of tower bases and other areas of disturbance have not yet been finalized and are therefore unknown.

The Crescent Valley and Pine Valley route alternatives would be constructed near properties that could contribute to the proposed Roberts Mountain ethnohistoric district. The Pine Valley (a) and (b) routes have the fewest numbers of significant or unevaluated prehistoric sites. The Pine Valley (a) and (b) and Buck Mountain alternatives would involve impacts to the Colonel Conner Massacre Site, a potential ethnohistoric property. All of the route alternatives would cross the historic Pony Express Trail and cross or come within view of the historic Eureka-Palisade Railroad grade. Overall, the Pine Valley (a) route alternative receives the best score in the cultural resources category.

The Buck Mountain alternative would traverse the largest number of significant prehistoric sites. Many of these sites also retain a high amount of integrity given their relatively remote location. This route also would transect an aboriginal trail and could affect 12 recorded cultural properties that may contribute to a proposed ethnohistoric district. It would also transect cultural properties that could contribute to an ethnohistoric district associated with antelope hunting, would cross the Pony Express Trail, and would be within the viewshed of the Emigrant Trail. Visual impacts to cultural sites are also rated in this table.

Visual Resource Impacts

All five route alternatives would cause visual impacts related to ground disturbance during construction. These impacts can be mitigated by minimizing grading and vegetation removal and implementing the Reclamation Plan in Appendix E. Table 3.20-4 summarizes the visual impacts of the project on Key Observation Points (KOPs). The BLM and State Historic Preservation Office representatives identified these KOPs along the five route alternatives (see [Figure 3.9-1](#) in Section 3.9, Visual Resources, for the KOP location map). Table 3.20-4 lists the number of KOPs with low, medium or high visual impact ratings, which is based on a comparison of the project's contrast against the BLM established visual resource management class objectives. These ratings reflect the anticipated level of impact before mitigation, because it is used to determine if the mitigation measure brings the proposed activity into compliance with the established management activity.

The bottom half of Table 3.20-4 compares visual impacts related to design type, specifically whether or not the transmission line would be located alone in the landscape or would parallel an existing line. New non-parallel alignment was assigned a high impact rating. Parallel alignment within approximately 1,000 feet of an existing transmission line 60 kV or greater was assigned a medium impact rating. Parallel alignment within approximately 250 feet of an existing transmission line 60 kV or greater was assigned a low impact rating (i.e., the most desirable from a visual impact perspective).

These two subcategories were then combined (giving the KOP rankings 75% weight and the design type rankings 25% weight) to reveal an aggregate ranking. This combined ranking reveals that the Pine Valley (a) alternative is the preferred route for minimizing impacts to visual resources. Analysis of the visual impacts associated with each alternative follows.

All of the route alternatives would cross a BLM designated "Low Visibility Corridor" along Interstate 80 and would be visible to eastbound and westbound traffic. This is considered a medium visual impact, as there is already an existing transmission line at this crossing.

TABLE 3.20-4: COMPARISON OF ROUTE ALTERNATIVES — VISUAL RESOURCE IMPACTS

Segments	A	B*	C	D	E	F	G	H	I	J	Impact Rating	Impact Rating Score	Relative Importance	Crescent Valley		Pine Valley		Buck Mtn
Visual Resources	#	#	#	#	#	#	#	#	#	#				(a)	(b)	(a)	(b)	
Visual Impacts to KOPs**																		
Low		4	1	1		1				2	L	1	1	7	7	5	5	3
Med	1	1	1	1	4		2	2		3	M	2	1	14	14	16	16	18
High		1			2			1	1		H	3	1	6	9	3	6	6
													TOTAL	27	30	24	27	27
													RANK	2	3	1	2	2

* Segment B incorporating the L re-route.

** Key Observation Point

* Segment B incorporating the L re-route.

** Key Observation Point

Segments	A	B*	C	D	E	F	G	H	I	J	Impact Rating	Impact Rating Score	Relative Importance	Crescent Valley		Pine Valley		Buck Mtn
Transmission Line Alignment	Miles	Miles	Miles	Miles	Miles	Miles	Miles	Miles	Miles	Miles				(a)	(b)	(a)	(b)	
New Non-parallel Alignment		18.6	35.7	19.5	74.8	16.8	17.0	20.4			H	3	1	157.2	167.4	267.0	277.2	331.5
Parallel Alignment +/- 1,000 ft from exiting transmission line (60 kV or >)		8.1					2.9		23.4	28.3	M	2	1	125.4	119.6	109.2	103.4	56.6
Parallel Alignment +/- 250 ft from exiting transmission line (60 kV or >)	16.7	35.4							6.9	11.7	L	1	1	70.7	70.7	35.3	35.3	28.4
													TOTAL	353.3	357.7	411.5	415.9	416.5
													RANK	1	2	3	4	5

* Segment B incorporating the L re-route.

** sighted in 1999 and 2000 surveys

Visual Resources — KOP Impacts and Alignment — Combined Rank Analysis

75/25	7	11	6	10	11
RANK	2	4	1	3	4

Note: Impact ratings in this category reflect the level of impact before mitigation, because the exact locations of towers have not yet been determined.

The Crescent Valley (b) route alternative would have the highest number of significant impacts to KOPs. Both Crescent Valley (b) and Pine Valley (b) route alternatives would create a significant impact to KOP 21 at the Pony Express Trail crossing. Crescent Valley (a) and (b) route alternatives have the most miles of existing transmission lines (i.e., parallel alignment opportunities) – a positive element for minimizing visual impacts. KOP 10 represents a significant historic site (Eureka-Palisade Railroad grade) and the Pine Valley (a) and (b) and Buck Mountain routes would have a significant impact to the landscape context and visual setting of this historic feature.

The Buck Mountain route alternative ranks in the middle between the Crescent Valley and Pine Valley routes in terms of significant visual impacts to KOPs. The Visual Resource Management (VRM) analysis resulted in strong structural contrast ratings for all KOPs along Segment E of the Buck Mountain route and moderate visual impacts for four KOPs and significant impacts for two KOPs. It also would have a significant impact on a portion of the historic Eureka-Palisade Railroad grade represented by KOP 12, due to the importance of the surrounding landscape to the site. The Buck Mountain route alternative has the fewest miles of existing transmission lines (i.e., fewest parallel alignment opportunities), and thus ranks worst under the alignment category.

While significant visual impacts would be encountered with all the alternatives, the Pine Valley (a) alternative ranks the best overall in terms of visual impacts. It would have the fewest significant impacts

to KOPs, including visual impacts to cultural sites (as shown in Table 3.20-3). Of the two significant impacts, one is due to the contrast rating’s inconsistency with the established management objectives along Segment D; the second is due to a cultural site’s integrity and visual setting being impacted by the proposed transmission line along Segment I. These impacts and proposed mitigation measures to reduce visual contrast and visual impact are discussed in detail in Sections 3.9 and 3.16.

3.20.2 IDENTIFICATION OF THE ENVIRONMENTALLY PREFERRED ROUTE ALTERNATIVE

As shown in Table 3.20-5, the Pine Valley (a) route scores best in three out of the four key resource categories, making it overall the environmentally preferred route alternative.

TABLE 3.20-5: SUMMARY OF RANKINGS — ROUTE ALTERNATIVES COMPARISON

	Crescent Valley (a)	Crescent Valley (b)	Pine Valley (a)	Pine Valley (b)	Buck Mountain
Wildlife	4	5	1	3	2
Invasive, Nonnative Species	1	2	3	4	5
Cultural Resources	4	5	1	2	3
Visual Resources	2	4	1	3	4

The methodology for comparing and ranking the route alternatives is described in detail in Appendix C. The BLM has also selected the Pine Valley (a) route as the agency preferred alternative based on the analyses and findings in this document, including the analysis of the No Action Alternative presented below, as well as consideration of cumulative impacts, the proposed RMP amendments, the purpose and need for the action, and other findings in this EIS.

3.20.3 UNAVOIDABLE SIGNIFICANT ADVERSE EFFECTS

While the majority of environmental impacts would be fully mitigated by SPPC through avoidance of sensitive areas, reclamation, best management practices, and other techniques, impacts to the following resources could remain significant and unavoidable with the Pine Valley (a) transmission line route (i.e., the preferred alternative):

Visual impacts to the setting of the historic Eureka-Palisade Railroad grade (as shown in KOP 10 at the intersection of Segments C and D). Please refer to Section 3.16, Cultural Resources, for more detail about visual impacts to the historic railroad setting.

Although residual impacts may remain significant after mitigation, the mitigation measures provided in Section 3.16 could be implemented to reduce the impact.

3.20.4 NO ACTION ALTERNATIVE

The National Environmental Policy Act (NEPA) requires that an EIS include analysis of the “No Action Alternative,” against which the effects of the “action” alternatives can be evaluated and compared. The

No Action alternative in this EIS would mean that no new transmission facilities would be constructed between the Falcon and Gonder substations. Under the No Action Alternative, SPPC would attempt to meet its rapidly growing customer needs with existing facilities, along with other measures to compensate for the anticipated shortfall in the supply of electrical power in the region. The No Action Alternative also would mean that the associated BLM Resource Management Plan amendments would not be required.

Under the No Action Alternative, the projected shortage of electric power in SPPC's control area will continue to grow as customers demand greater amounts of electricity. This shortage is forecast to occur during peak load conditions in the summer of 2003, and may result in the curtailment of some customers. Under this alternative, there will also be a continued shortage of recommended energy reserves during peak load conditions. This existing shortage could result in SPPC's inability to provide service to some customers during unscheduled outages of major transmission or generation facilities. Under the No Action Alternative, adverse environmental, socioeconomic, and electric service impacts could result from compensating actions taken by SPPC to ensure an adequate, affordable, and reliable energy supply to northern Nevada.

If the No Action Alternative is selected following the EIS and right-of-way application review process, SPPC would immediately notify the State of Nevada Public Utilities Commission that it cannot comply with the commission's Electric Resource Planning Opinion and Order issued April 8, 1999. This order found that the Falcon to Gonder 345 kV transmission project is in the public interest. Following notification, SPPC and the commission would most likely initiate an emergency planning process to determine the best way to meet forecast customer energy requirements.

GEOLOGY AND MINERALS

Under the No Action Alternative, none of the project-related impacts to geology and mineral resources would occur. Geologic and topographic conditions would remain unchanged, except as they might be affected by other projects, notably mining. Geologic hazards would continue as noted in Section 3.1. However, similar impacts could occur in other areas as SPPC and the State of Nevada PUC would begin emergency planning efforts to pursue other transmission and/or generation projects to meet the projected energy load capacity shortfall.

SOILS

Under the No Action Alternative, impacts to existing soils would not occur from this project. Soils associated with this project would remain as they currently exist. Impacts to soils in portions of the project area could still result from other unrelated projects proposed within the area. Undetermined impacts to soils could also occur in other locations if an alternative project were proposed to replace this one.

WATER RESOURCES

Under the No Action Alternative, the potential impacts identified in Section 3.3 with regard to water resources would not occur. Construction activities would not occur, thereby avoiding effects of discharges of sediment and contaminants to water courses. Hazards related to flooding and flash floods would remain as natural events. No impacts to wells related to project construction activities would occur. In sum, no project-related impacts would occur. It is assumed that impacts related to other projects would be the subject of separate environmental impact evaluation and mitigation and permit requirements.

VEGETATION

The No Action Alternative would avoid project impacts to existing vegetation resources, as described in Section 3.4. However, undetermined impacts to vegetation resources could also occur in other locations if an alternative project were proposed to replace this one.

INVASIVE NONNATIVE SPECIES

Under the No Action Alternative, impacts related to invasive nonnative species would not occur from this project. Existing noxious weed and cheatgrass infestations would remain on trajectories of growth and spread as they currently exist. The No Action Alternative would continue current management practices under the approved Shoshone-Eureka RMP, the Egan Resource Area RMP, and the Elko Resource Area RMP, and proposed the Falcon to Gonder transmission line would not be constructed on public lands in these resource areas. Impacts related to invasive nonnative species could still result from other projects proposed within the project area (see Cumulative Impacts discussion in Chapter 4). Undetermined impacts related to invasive nonnative species could also occur in other locations if an alternative project were proposed to replace this one.

WILDLIFE AND WILDLIFE HABITAT

Under the No Action Alternative, impacts to existing wildlife habitat associated with this project would not occur. Potential impacts to nesting passerines and raptors would not occur. Any replacement project would likely have some impacts on wildlife and wildlife habitat.

SPECIAL-STATUS SPECIES

Under the No Action Alternative, impacts to existing special-status species and their habitat associated with this project would not occur. However, habitat improvements that could result from mitigation measures would not be implemented either.

RANGE RESOURCES

Under the No Action Alternative, the minor impacts to livestock grazing and wild horses associated with this project would not occur. However, a replacement project could have impacts on range resources, if located on similar public lands and/or open space.

VISUAL RESOURCES

The No Action Alternative would continue the current management of public lands under established and interim Visual Resource Management (VRM) Classes for the protection of visual values in the BLM's Shoshone-Eureka, Elko, and Egan planning areas. Impacts from the proposed transmission line that would potentially exceed established and interim VRM Class objectives would be avoided. However, any replacement project could also pose visual impacts to the surrounding landscape.

PUBLIC HEALTH AND SAFETY

Project-related public health and safety hazards related to fire, hazardous materials, electricity, and blasting would be avoided with the No Action Alternative. However, a transmission and/or generation replacement project would likely involve similar impacts in other areas.

NOISE

Under the No Action Alternative, there would be no significant noise impacts associated with construction or operation of the transmission line. However, a replacement project, such as another transmission line corridor or energy plant, would likely involve some noise impacts as well.

AIR QUALITY

Under the No Action Alternative, there would be no air quality impacts associated with construction or maintenance of the transmission line. Existing roads would not require improvements to construct this project. However, a replacement project, such as another transmission line corridor or energy source such as a coal-fired power plant, would likely involve some air quality impacts.

LAND USE AND ACCESS

Under the No Action Alternative, the potential impacts related to land use and access would be avoided. These impacts would include potential disturbances of private land, potential conflicts with existing land uses or existing rights-of-way, right-of-way acquisition, potential displacements of urban/industrial development, and potential conflicts with applicable land use plans or policies. Under the No Action Alternative, existing land uses (i.e., private development, agriculture, etc.) would continue in the project area. The No Action Alternative would continue current land use and realty action practices under the approved Shoshone-Eureka RMP, the Egan RMP, and the Elko RMP. Land use and access impacts would need to be evaluated for any replacement project.

RECREATION AND WILDERNESS

No substantial adverse impacts to recreation/wilderness from the project were identified. However, any replacement project that would be pursued if No Action Alternative is selected would be evaluated for potential impacts to recreational and wilderness areas.

SOCIAL AND ECONOMIC VALUES

Under the No Action Alternative, the impacts related to potential conflicts with mining operations and loss of property value would be avoided. However, mitigation measures are available that could avoid or reduce these impacts. Project benefits from increased employment, increased local sales taxes, and

increased local property taxes would be unrealized as a result of the No Action Alternative. Other communities in the vicinity of any replacement project would likely reap these benefits.

CULTURAL RESOURCES

Under the No Action Alternative, the impacts to cultural resources resulting from the project would be avoided. Some specific impacts that would be avoided under the No Action Alternative would be the visual intrusions upon potential TCPs and historic sites (e.g., Pony Express Trail and Eureka-Palisades Railroad grade). However, cultural resource impacts could be involved with any replacement project.

PALEONTOLOGY

Under the No Action Alternative, the impacts to paleontological resources resulting from the project would be avoided. However, paleontological resource impacts could be involved with any replacement project.

ENVIRONMENTAL JUSTICE

No substantial adverse impacts to minority and low-income communities resulting from the project were identified. If a replacement project were located on federal public land, it would need to be evaluated for potential environmental justice impacts.

NATIVE AMERICAN CONCERNS

Under the No Action Alternative, the potential impacts to medicinal plants of concern to local Native Americans would be avoided. However, any replacement project located on federal public land would be evaluated for similar resource impacts and other Native American concerns.